Case/Application number: 10/517,311
Priority Filing Date: PCT/JP03/07887 filed 06/20/2003
Format for Search Results: Email
Meaning of unusual acronyms or initialisms:

Identify the novelty:
Method to determine malting of a grain by assaying the activity of the enzyme, "fatty acid hydroperoxide lyase", or decrease in teh amount of fatty acid hydroperoxide

Additional comments:
Search tems that may be useful: fatty acid hydroperoxide lyase, fatty acid hydroperoxide, HPLS, holmolytic HPLS, hydroperoxide isomerase,

***** INVENTOR RESULTS *****
=> d his l27

(FILE 'HCAPLUS' ENTERED AT 12:02:30 ON 19 FEB 2009)
L27 4 S L26 NOT L20

=> d que l27
L1 6507 SEA FILE=HCAPLUS ABB=ON PLU=ON MALT/CT
L2 24654 SEA FILE=HCAPLUS ABB=ON PLU=ON BEVERAGES+UF/CT

L3 2865 SEA FILE=HCAPLUS ABB=ON PLU=ON MALT? (S) (L2 OR BEVERAGE# OR SOFT DRINK# OR SODA POP#)
L4 1618 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE?

L5 136 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE LYASE
L6 3 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) (HPLS OR HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXID E ISOMEASE)
L7 73 SEA FILE=HCAPLUS ABB=ON PLU=ON HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXIDE ISOMERASE
L8 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND L4
L9 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND ((L5 OR L6 OR L7))
L10 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 OR L9
L11 6930 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROPEROXIDES+UF/CT
L12 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L1
L13 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 NOT L10
L14 3469 SEA FILE=HCAPLUS ABB=ON PLU=ON (HYDROPEROXID? OR L11) (S) (FATTY ACID# OR LYASE? OR HPLS OR HOMOLYTIC HPLS OR ISOMERASE)
L16 55802 SEA FILE=HCAPLUS ABB=ON PLU=ON ANALYSIS/CT
L17 6137 SEA FILE=HCAPLUS ABB=ON PLU=ON SCREENING/CT
L18 888 SEA FILE=HCAPLUS ABB=ON PLU=ON (L1 OR MALT#) (W) (SCREEN? OR ASSAY? OR L16 OR L17)
L19 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND (L11 OR L14)
L20 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 OR L13 OR L19
L21 55 SEA FILE=HCAPLUS ABB=ON PLU=ON "KURODA HISAO"/AU
L22 6 SEA FILE=HCAPLUS ABB=ON PLU=ON "FURUSHO SHIGEKI"/AU
L23 39 SEA FILE=HCAPLUS ABB=ON PLU=ON "KOJIMA HIDETOSHI"/AU
L24 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L21 AND (L22 OR L23)
L25 1 SEA FILE=HCAPLUS ABB=ON PLU=ON L22 AND L23
L26 5 SEA FILE=HCAPLUS ABB=ON PLU=ON L24 OR L25
L27 4 SEA FILE=HCAPLUS ABB=ON PLU=ON L26 NOT L20

=> d his l40

(FILE 'AGRICOLA, BIOSIS, BIOTECHNO, FSTA, SCISEARCH' ENTERED AT 12:19:25 ON 19 FEB 2009)
L40 8 S L38 OR L39

FILE 'HCAPLUS' ENTERED AT 12:24:47 ON 19 FEB 2009

=> d que l40
L35 2141 SEA KURODA H?/AU
L36 54 SEA FURUSHO S?/AU
L37 3645 SEA KOJIMA H?/AU
L38 8 SEA L35 AND ((L36 OR L37))
L39 1 SEA L36 AND L37
L40 8 SEA L38 OR L39

=> dup rem l27 l40
FILE 'HCAPLUS' ENTERED AT 12:25:49 ON 19 FEB 2009
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2009 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'BIOSIS' ENTERED AT 12:25:49 ON 19 FEB 2009
Copyright (c) 2009 The Thomson Corporation

FILE 'FSTA' ENTERED AT 12:25:49 ON 19 FEB 2009
COPYRIGHT (C) 2009 International Food Information Service

FILE 'SCISEARCH' ENTERED AT 12:25:49 ON 19 FEB 2009
Copyright (c) 2009 The Thomson Corporation
PROCESSING COMPLETED FOR L27
PROCESSING COMPLETED FOR L40
L41 6 DUP REM L27 L40 (6 DUPLICATES REMOVED)
ANSWERS '1-4' FROM FILE HCAPLUS
ANSWER '5' FROM FILE FSTA
ANSWER '6' FROM FILE SCISEARCH

=> d l41 1-6 ibib ab

L41 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:1197592 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 144:149143
TITLE: Characterization of 9-fatty acid hydroperoxide lyase-like activity in germinating barley seeds that transforms 9(S)-hydroperoxy-10(E),12(Z)-octadecadienoic acid into 2(E)-nonenal
AUTHOR(S): Kuroda, Hisao; Kojima, Hidetoshi; Kaneda, Hirotaka; Takashio, Masachika
CORPORATE SOURCE: Frontier Laboratories of Value Creation, Sapporo Breweries Ltd., 10 Okatohme, Yaizu, Shizuoka, 425-0013, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2005), 69(9), 1661-1668
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Previously, it was reported that 2(E)-nonenal, having a low flavor threshold (0.1 ppb) and known as the major contributor to a cardboard flavor (stale flavor) in stored beer, was produced by lipoxygenase-1 and a newly found factor named 9-fatty acid hydroperoxide lyase-like (9-HPL-like) activity in malt. To assess the involvement of 9-HPL-like activity in beer staling, the values of the wort nonenal potential, an index for predicting the staleness of beer, with the lipoxygenase and 9-HPL-like activity of 20 com. malts were compared. There was a significant correlation between the malt 9-HPL-like activity and the values of wort nonenal potential (r = 0.53), while the correlation between malt lipoxygenase activity and the wort nonenal potential was statistically insignificant. Anal. of the partially purified 9-HPL-like activity from embryos of germinating barley seeds indicated that 9-HPL-like activity consisted of fatty acid hydroperoxide lyase and 3Z:2E isomerase.
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 2
ACCESSION NUMBER: 2003:377554 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 139:100215
TITLE: Characterization of factors involved in the production of 2(E)-nonenal during mashing
AUTHOR(S): Kuroda, Hisao; Furusho, Shigeki; Maeba, Hideo; Takashio, Masachika
CORPORATE SOURCE: Frontier Laboratories of Value Creation, Sapporo Breweries Ltd., Shizuoka, 425-0013, Japan
SOURCE: Bioscience, Biotechnology, and Biochemistry (2003), 67(4), 691-697
CODEN: BBBIEJ; ISSN: 0916-8451
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To characterize the factors involved in the production of volatile aldehydes during mashing, a model mashing experiment was done. After the authors inactivated the endogenous lipoxygenase (LOX) activity in the mash by mashing at 70° for 30 min, further incubation with recombinant barley LOX-1 stimulated the accumulation of 2(E)-nonenal; however, this effect was significantly reduced by boiling the mash sample. The result suggests that both LOX-1 and a heat-stable enzymic factor are involved in the production of 2(E)-nonenal during mashing. Malt contained fatty acid hydroperoxide lyase-like activity (HPL-like activity) that transformed 9-hydroperoxy-10(E), 12(Z)-octadecadienoic and 13-hydroperoxy-9(Z), 11(E)-octadecadienoic acid into 2(E)-nonenal and hexanal, resp. Proteinase K sensitivity tests showed that they are distinct factors. 9-HPL-like activity survived through the mashing at 70° for 30 min but was inactivated by boiling, suggesting it will be the heat-stable enzymic factor found in the model mashing experiment
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:643481 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 147:67198
TITLE: Stress evaluation method, stress evaluation marker, stress evaluation diagnostic agent, and stress evaluation system
INVENTOR(S): Kojima, Hidetoshi; Kuroda, Hisao; Kaneda, Hirotaka
PATENT ASSIGNEE(S): Sapporo Breweries Limited, Japan
SOURCE: PCT Int. Appl., 33pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2007066484 | A1 | 20070614 | WO 2006-JP322860 | 20061116 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: JP 2005-355106 A 20051208
AB Provided are: a method for evaluating stress in a simple and objective manner; a stress evaluation marker; and a diagnostic agent for evaluating stress. The method for evaluating stress is characterized in that stress is evaluated based on the concentration of Zn-α2-glycoprotein in a body fluid sample (e.g., saliva) of an animal to be tested. The stress evaluation marker comprises Zn-α2-glycoprotein. The stress diagnostic agent comprises an anti-Zn-α2-glycoprotein antibody.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1336495 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 145:313677
TITLE: "Fatty acid hydroperoxide lyase" as a key enzyme for the production of trans-2-nonenal during mashing
AUTHOR(S): Kuroda, Hisao; Kojima, Hidetoshi; Kaneda, Hirotaka; Takashio, Masachika
CORPORATE SOURCE: Frontier Laboratories for Value Creation, Sapporo Breweries Ltd., 10 Okatohme, Yaizu, Shizuoka, 425-0013, Japan
SOURCE: Proceedings of the Congress - European Brewery Convention (2005), 30th, 83/1-83/7
CODEN: EBCPA6; ISSN: 0367-018X
PUBLISHER: Fachverlag Hans Carl GmbH
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB Trans-2-nonenal, the major contributor of cardboard flavor during the storage of beer, is produced by the cascade reaction of barley lipoxygenase-1 and 9-fatty acid hydroperoxide lyase-like activity (9-HPL-like activity) during mashing (Kuroda et al. 2003). In this study, we found that partially purified 9-HPL-like activity had properties specific to an enzyme 'fatty acid hydroperoxide lyase (HPL)'. There was significant correlation between malt HPL activity and nonenal potential, an index for predicting the degree of staleness of beer, suggesting that malt HPL would be a useful marker to select malts for producing beer with stable flavor.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L41 ANSWER 5 OF 6 FSTA COPYRIGHT 2009 IFIS on STN
ACCESSION NUMBER: 2004:H1059 FSTA Full-text<<LOGINID::20090219>>
TITLE: Method of screening malt and process for producing foaming malt beverage.
INVENTOR: Kuroda, H.; Furusho, S.; Kojima, H.
PATENT ASSIGNEE: Sapporo Breweries Ltd.; Sapporo Breweries, Tokyo, Japan
SOURCE: PCT International Patent Application, (2003) ref.
PATENT INFORMATION: WO 2004001066 A1
PRIORITY APPLN. INFO: JP 2002-180315 20020620
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
SUMMARY LANGUAGE: English
AB A method of screening malts, characterized by determining the fatty acid hydroperoxide-lyase activity of the malts, is described. A process for producing a foaming malt beverage, characterized by using a malt that has low fatty acid hydroperoxide-lyase activity and that has been selected by the screening method, is also provided.

L41 ANSWER 6 OF 6 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on

STN
ACCESSION NUMBER: 2004:797619 SCISEARCH Full-text<<LOGINID::20090219>>
THE GENUINE ARTICLE: 850DU
TITLE: Design and baseline characteristics of a study of primary prevention of coronary events with pravastatin among Japanese with mildly elevated cholesterol levels
AUTHOR: Nakamura H (Reprint)
CORPORATE SOURCE: Mitsukoshi Hlth & Welfare Fdn, STEC Jyoho Bldg, 1-24-1 Nishishinjuku Shinjuku, Tokyo 1600023, Japan (Reprint)
AUTHOR: Arakawa K; Itakura H; Kitabatake A; Goto Y; Saito Y; Toyota T; Nakaya N; Nishimoto S; Yamamoto A; Muranaka M; Nakamura H; Saito Y; Nakaya N; Yamamoto A; Ishikawa T; Doha N; Fukuuchi Y; Kikuchi S; Shibata Y; Shimada K; Nakamura K; Fujita T; Yokoyama S; Abe T; Abiru M; Adachi T; Aizawa H; Akutsu M; Aoki K; Aoki S; Ato K; Bekki E; Fujii S; Fujii W; Fujikane T; Fujita K; Fujita T; Goto S; Haneda T; Hasebe N; Hasegawa A; Hashimoto A; Hayasaka T; Hirata H; Hyuuga M; Ibayashi Y; Ide H; Iida Y; Inoue N; Inui N; Ishida N; Ishii J; Itaya H; Ito H; Ito J; Ito K; Ito Y; Itoh H; Iwashima Y; Kakinoki S; Kamigaki M; Kamoi K; Kato N; Kihara A; Kikuchi K; Kimura T; Kitabatake A; Kobayashi T; Kobayashi T; Kodama T; Komatsu H; Komori K; Kondo A; Kurihara Y; Kuroda R; Maeda I; Makiguchi M; Makimura S; Makino T; Maruyama J; Masukawa S; Matsuo H; Migita N; Miyashita K; Miyazawa K; Mizutani M; Momose H; Morimoto H; Morioka M; Morita K; Nagai K; Nagashima K; Nakagawa N; Nakamura T; Nawate S; Nishiie K; Nishino T; Numazawa K; Obara A; Ogawa S; Oimatsu H; Okada H; Okada K; Okada T; Okamoto K; Ommura H; Omura Y; Onodera Y; Ooiwa H; Ota Y; Otsubo M; Ozaki T; Saito H; Sakamoto H; Sakuma I; Sato A; Sato H; Sato I; Sato K; Sato M; Sato Y; Sato Y; Sekiguchi M; Senga K; Shibata S; Shikano Y; Shimamoto K; Shimizu H; Shinano H; Shinohara M; Shogase T; Shudo H; Sugata T; Suzuki A; Suzuki M; Tabata H; Tagami S; Taguchi A; Takahashi D; Takahashi K; Takahashi T; Takao K; Takayanagi N; Takeda H; Takenaka T; Takigami Y; Takizawa Y; Tani M; Tobise K; Tomita K; Tsubokura T; Tsujisaki M; Tsukamoto T; Uchiyama M; Uchiyama S; Ueda T; Uehara Y; Ura N; Yamashita H; Yokota H; Yokota T; Yoshida I; Yoshida K; Yoshimura H; Yoshizawa T; Abe K; Abe S; Abe Y; Abukawa T; Aida M; Ajihara T; Akino Y; Akitsuki T; Akutsu K; Anzai H; Asakura T; Ataka Y; Baba T; Eguchi H; Fukui A; Fukushima M; Funada K; Fushimi E; Goto Y; Haga E; Hara M; Haraguchi M; Haruyama T; Hashimoto S; Hayasaka K; Hayashi M; Hayashi T; Hiramori K; Hirasawa Y; Hirosaka A; Hitomi H; Horino Y; Ikeda K; Ikeda K; Ikeda M; Iriyama S; Ishigaki Y; Ishii R; Ishikawa K; Ito N; Ito S; Ito S; Ito T; Kagaya Y; Kaiyama H; Kakizaki M; Kamata T; Kanazawa A; Kanazawa M; Kanazawa Y; Kanno M; Kasai Y; Kato K; Katono E; Kawamura M; Kawashima S; Kibira S; Kikuchi H; Kikuchi J; Kikuchi M; Kikuchi T; Kimura H; Kimura H; Kimura K; Kimura M; Kitada T; Kitagawa M; Kohzuki M; Komatsu N; Komatsu T; Kosokabe H; Kubo N; Kubota I; Kubota Y; Kudo K; Kusano Y; Kushibiki H; Machii K; Maehara K; Maruyama Y; Masuda M; Matsuda G; Matsuhashi A; Matsuoka H; Matsuoka S; Meguro H; Meguro Y; Midorikawa S; Mikuniya A; Minami O; Misawa S; Mitsugi M; Miura H; Miura M; Miyabe S; Miyazaki Y; Murakoshi H; Muroi S; Nakahata H; Nakajima J; Nakajima N; Nakanishi T; Nakano J; Nakazato K; Nakazono M; Namekawa G; Nemoto T; Nishimura S; Nishiyama A; Nogae I; Nunokawa T; Ogawa A; Ogawa A; Ohnuma H; Ohtomo E; Ohwada T; Oikawa M; Oikawa S; Oizumi H; Oka Y; Okano T; Okuguchi F; Okumura K; Omata K; Ono K; Ono T; Ono Y; Oriso S; Osanai T; Otsuka K; Owada K; Owada M; Sagara M; Saito K; Saito K; Saito M; Sakamoto M; Sakauchi Y; Sano R; Sasaki A; Sasaki M; Sasaki Y; Sato M; Sato S; Sato S; Sato S; Sato T; Satoh J; Seki H; Seki K; Seki N; Sekikawa A; Shiga N; Shiga Y; Shimizu T; Shindo J; Shinzawa H; Shirata A; Shirato K; Shishido Y; Suda T; Suzuki A; Suzuki F; Suzuki H; Suzuki H; Suzuki N; Suzuki Y; Taira K; Takagi H; Takahashi A; Takahashi H; Takahashi K; Takahashi K; Takahashi S; Takeda H; Takeda H; Takeuchi

K; Tamasawa N; Tamura Y; Taneda Y; Tani M; Tominaga Y; Tomoike H; Toyota T; Tsukahara Y; Tsunoda K; Ube K; Uehara O; Uemura T; Ueno A; Ueshima K; Umemura S; Wakamatsu H; Watanabe R; Watanabe T; Yabe R; Yabuki T; Yamada K; Yamada Z; Yamaki M; Yamaki S; Yamamoto H; Yamane K; Yamane K; Yamazaki T; Yokoshima T; Yoshino M; Yuuki K; Abe D; Abe M; Abe R; Aikawa J; Akaishi M; Akanuma M; Akashi T; Amaki S; Aoyama N; Arakawa K; Araki Y; Araki Y; Arao M; Asai K; Asano H; Ashino S; Atarashi H; Atarashi K; Awata T; Ayaori M; Baba A; Ban T; Bujo H; Chiba A; Doba N; Ebara F; Ebara T; Ebisuno M; Eida K; Emoto N; Endo K; Endo T; Endo T; Endo Y; Etou K; Fujimori S; Fujimoto K; Fujioka M; Fujioka T; Fujishiro K; Fujita H; Fujita M; Fujita S; Fujita T; Fujita Y; Fukuma N; Fukuma Y; Fukumoto M; Fukuo Y; Funatsu K; Furutani N; Geshi E; Haketa A; Hamamoto H; Hamana G; Han A; Handa S; Handa Y; Hara H; Hara H; Hara T; Hara Y; Harada Y; Hasegawa A; Hashida J; Hashiguchi S; Hashimoto Y; Hata S; Hatano T; Hayakawa A; Hayama N; Hayama T; Hayashi K; Hayashi M; Hayashi R; Hayashi T; Hayashi Y; Hibio S; Hida S; Hiejima K; Higano H; Higashi K; Hikita M; Hiramatsu M; Hiramoto Y; Hirano T; Hirayama Y; Hiroi N; Hirose K; Hirose W; Hisada T; Hisamitsu S; Hiyoshi T; Hiyoshi Y; Hojoh M; Homori M; Honda H; Hongo K; Honma H; Hosoya J; Hosoya T; Houjo K; Ibuki C; Ichiba K; Ichiba T; Ichikawa S; Ikeda M; Ikehata N; Ikejiri A; Ikemoto S; Iketani T; Ikewaki K; Imai T; Imaizumi T; Imamura M; Imamura Y; Inami S; Inamura T; Ino T; Inoue M; Inoue M; Inoue S; Inoue T; Isaka T; Ishibashi F; Ishibashi K; Ishibashi T; Ishida M; Ishii H; Ishii H; Ishikawa M; Ishikawa M; Ishikawa T; Ishimaru Y; Ishiyama T; Isoda K; Isogai Y; Itakura H; Ito H; Ito H; Ito K; Ito R; Ito S; Ito S; Ito T; Ito Y; Iwamoto N; Kaga F; Kageyama A; Kageyama S; Kaiho T; Kaizuka H; Kamada F; Kamata T; Kamba M; Kamon H; Kanae K; Kanazawa A; Kanazawa M; Kaneko K; Kariya T; Kashiwado M; Kashiwagi H; Kashiwazaki K; Kashiwazaki K; Kasuya H; Kato H; Kato S; Kato T; Kato T; Katoh T; Katsumi T; Kawaguchi H; Kawai M; Kawakami M; Kawamura M; Kawamura M; Kawana M; Kawano E; Kawano M; Kawasaki Y; Kawazu S; Kijima F; Kikkawa K; Kikuchi Y; Kinoshita H; Kinoshita M; Kishida H; Kishida T; Kitajima W; Kiyomi S; Kobayashi M; Kobayashi N; Kobayashi Y; Kobayashi Y; Kodani E; Kofune T; Kohashi E; Koide N; Koike K; Koizumi K; Komi R; Komuro I; Kondo S; Kono T; Koto F; Kubo A; Kuboki M; Kubota M; Kubota T; Kubouchi Y; Kumagai Y; Kurata H; Kuroda T; Kurokawa M; Kurumatani H; Kusama Y; Kushida M; Kushiro T; Kusuhara M; Kuwahara K; Kuwaki K; Maekawa H; Mamura M; Maruyama J; Maruyama T; Maruyama Y; Maruyama Y; Masabayashi H; Mashiko S; Masuda A; Masuda M; Masuo M; Matsumoto M; Matsumura Y; Matsushima M; Matsuura H; Matsuyama K; Matsuzaki T; Mikami K; Miki S; Mitsubayashi H; Mituhashi R; Miyaji Y; Miyake Y; Miyamoto S; Miyanaga T; Miyashita Y; Miyatake Y; Miyazaki S; Mizobuchi K; Mizokami T; Mizuno K; Mizuno O; Mori I; Mori K; Morita H; Morita Y; Moritani S; Morooka S; Murakawa Y; Murano S; Nagakura H; Nagano S; Naganuma Y; Nagasawa K; Nagayama M; Naito H; Nakajima H; Nakajima K; Nakamoto K; Nakamura K; Nakamura A; Nakamura H; Nakamura K; Nakamura N; Nakano H; Nakaya N; Nakayama K; Nakayama K; Nakazato H; Naruse K; Naruse M; Nemoto M; Niitsu Y; Niitsuma T; Nishida T; Nishikawa H; Nishimura G; Nishimura R; Nishimura Y; Nishio E; Nishiwaki M; Nishiyama A; Nishiyama J; Nishiyama K; Nishiyama T; Noda H; Nomoto M; Nomura A; Notoya Y; Nozawa K; Numano F; Numano F; Obata T; Ogata E; Ogata K; Ogata N; Ogawa K; Ogawa M; Ogawa T; Ogita K; Ogiwara M; Ogura H; Ohashi Y; Ohba T; Ohno A; Ohta M; Oi K; Oka M; Okai M; Okazaki F; Okimoto T; Okuda K; Okuni S; Onikura S; Ono N; Ono S; Ono Y; Osuga E; Osuzu F; Ota M; Ota Y; Otsuka M; Otsuka T; Otsuka Y; Oyama N; Oyama N; Oyama R; Oyama T; Ozawa K; Ozawa S; Rakue H; Saiki A; Saito F; Saito T; Saito T; Saito T; Saito Y; Saitoh H; Sakai H; Sakai S; Sakai T; Sakamoto N; Sakamoto Y; Sakurai

T; Sano H; Sano J; Sano M; Sano R; Sasaki H; Sasaki T;
Sato H; Sato H; Sato K; Sawada S; Sawashige K; Segawa K;
Segawa Y; Seimiya K; Seino Y; Sekine M; Sekine N; Sekine
S; Senzui M; Shige H; Shimada A; Shimada H; Shimada H;
Shimada M; Shimai S; Shimizu M; Shimokado K; Shinohara Y;
Shioiri K; Shirabe S; Shirai K; Shiratori Y; Shoda T;
Shuto H; Soeda H; Someya Y; Sonoda M; Soya N; Suda A;
Sugawara H; Sugii Y; Sumi T; Suzukawa M; Suzuki K; Suzuki
K; Suzuki S; Suzuki T; Suzuki T; Tada N; Tadera M; Taguchi
H; Taguchi M; Tahara K; Taira K; Tajima N; Takahashi A;
Takahashi K; Takahashi N; Takahashi S; Takahashi Y;
Takamura H; Takanashi H; Takano M; Takano T; Takao T;
Takata Y; Takayama E; Takayama M; Takazawa K; Takazawa M;
Take C; Takeda H; Takeda K; Takeda N; Takegawa S; Takei H;
Takei I; Takeichi M; Tamachi H; Tamano Y; Tamura K; Tamura
T; Tanaga K; Tanaka A; Tanaka A; Tanaka H; Tanaka K;
Tanaka N; Tanaka S; Tani M; Taniguchi K; Taniguchi Y;
Tazawa K; Terakado S; Teramoto T; Teraoka K; Tohyama Y;
Tojo K; Tokuyama Y; Tomaru A; Tomichi N; Tomimura M;
Tomiyasu K; Tomono M; Tsai R C; Tsubaki H; Tsuchiya T;
Tsuji M; Tsukada Y; Tsuruoka A; Tsuyuguchi M; Uchida Y;
Uchiyama T; Ueda Y; Uehara Y; Ueki A; Uemura R; Ueno K;
Uetsuka Y; Ui S; Ushiyama H; Usui M; Utsumi H; Utsunomiya
K; Wakata N; Warabi H; Watanabe I; Yagi H; Yagura M;
Yakubo S; Yamada S; Yamaguchi I; Yamaguchi T; Yamakado M;
Yamamoto T; Yamanaka H; Yamane Y; Yamasaki K; Yamashita M;
Yamashita T; Yamashita T; Yamazaki J; Yamazaki K;
Yanagisawa A; Yanagisawa M; Yanagisawa Y; Yano H; Yashima
M; Yo S; Yokota K; Yokota T; Yokoyama J; Yokoyama S;
Yomogita S; Yonemura A; Yoshida F; Yoshida H; Yoshida M;
Yoshimatsu Y; Yoshino G; Yoshioka K; Yoshitake N;
Yoshizawa N; Yoshizawa N; Yumikura S; Abe Y; Amitani K;
Aonuma K; Arai K; Arata N; Ashikaga T; Ban K; Beppu H;
Chiguchi M; Chikazoe T; Deguchi Y; Endo K; Endo Y;
Fujikura S; Fujino T; Fukushima F; Fusegawa Y; Genka C;
Hachiya H; Haga T; Hagiwara T; Handa M; Hara F; Hara M;
Hatori Y; Hayashi H; Higuchi Y; Hirao K; Hirata N; Hirota
H; Homma J; Homma Y; Hoshiba Y; Igarashi M; Ikeda Y; Inada
M; Inada N; Iseki H; Ishigami M; Itani O; Ito H; Iwahara
S; Iwamoto T; Iwata A; Jin Y; Kagyo H; Kaneko N; Kanemoto
N; Kaneshiro M; Kano H; Kanouchi T; Kato J; Kato K; Kawata
T; Kimu J; Kobayashi A; Kobori Y; Koga I; Koike J; Koizumi
M; Korenaga M; Kubota K; Kudo T; Kuji N; Kumagai K;
Kuniyoshi T; Kurihara K; Kuroda M; Kuroki S; Kushida Y;
Kushikata Y; Kuwabara M; Maeba T; Maeda T; Masuda Y;
Masumoto T; Matsuda H; Matsumoto T; Matsuzaki M; Mikawa T;
Mineki H; Miwa W; Miyajima E; Miyake F; Miyamoto K; Miyao
H; Miyazaki H; Miyazaki N; Miyazaki S; Moriyama M;
Munakata K; Muraiso T; Murakami S; Murakami T; Muranaka M;
Murasawa T; Nagaoka S; Nagase H; Nagashima J; Naka Y;
Nakajima S; Nakajima T; Nakamura T; Nakamura T; Nakao K;
Nakayama M; Nakazawa K; Namiki M; Narita N; Nasu Y; Nimura
I; Nishida A; Nishikawa T; Nobuoka S; Nomura Y; Noto M;
Oguma T; Ohmura K; Oikawa S; Oishi T; Okada H; Okamatsu K;
Okubo Y; Omori N; Omura M; Ori M; Osako K; Osako R; Owada
S; Ozawa K; Ryuzaki M; Saito J; Saito K; Saito S; Saito T;
Saito T; Saito Y; Sato A; Sato K; Sato T; Sato T; Seki H;
Seto K; Shibamoto M; Shima Y; Shoda M; Sogo Y; Suzuki K;
Suzuki Y; Syoji T; Tada H; Taguchi J; Takada I; Takahashi
N; Takahashi Y; Takamura T; Takao Y; Takeyoshi Y; Takigawa
O; Tamura S; Tanaka H; Tanaka J; Tanaka S; Terada H;
Tochihara T; Tohyama S; Tohyo S; Tokui M; Tomoda H; Toyama
K; Toyoda K; Tsunashima K; Uchida T; Uchida T; Umemura S;
Umezawa S; Umezawa T; Watanabe T; Watanabe T; Yamada Y;
Yamagami J; Yamaguchi T; Yamanaka K; Yamaoka S; Yamauchi
Y; Yamazaki K; Yamazaki Y; Yasuda G; Yasuda T; Yokoyama Y;
Yorozuya M; Yoshida M; Yoshimura N; Yoshimura N; Yoshitake
M; Aizawa T; Aizawa Y; Akutsu H; Akutsu T; Ando T; Aoyagi
K; Arai K; Arakawa M; Arisaka H; Banba N; Fujieda K;
Fujiwara H; Fujiwara Y; Fukuuchi Y; Furuno I; Gejyo F;
Godo M; Goto K; Goto M; Hama H; Handa Y; Hatano T; Hattori

N; Hayashi K; Hayashi T; Hayata H; Hirahara K; Hirayama K; Hirayama S; Hirono O; Hoshiyama M; Ichikawa S; Iijima H; Inomata A; Inoue K; Ishihara M; Ishikawa M; Ishikawa M; Ishikawa M; Ishikawa S; Ishikawa Y; Ito N; Ito Y; Iwamae S; Iwasaki S; Kado S; Kageyama Y; Kakishita H; Kamei T; Kamiyama K; Kanazawa H; Kaneko T; Kasai G; Kasai K; Kase H; Kato T; Katsura Y; Kawada K; Kawai H; Kawai Y; Kawakami Y; Kawashima S; Kawauchi A; Kayanuma K; Kimura Y; Kobayashi K; Kobayashi T; Komori S; Komuro F; Koro T; Koshizuka M; Koyama A; Koyata H; Kurabayashi T; Kurihara M; Kuroda H; Machida M; Maeda K; Matsumoto R; Matsumura M; Matsushima T; Matsushita H; Mimura A; Miyajima S; Miyazaki M; Mizutani M; Mori K; Mori M; Mori Y; Morita E; Morohashi H; Motohashi S; Murakami Y; Murata M; Murayama J; Murayama N; Murayama Y; Nagai A; Nagai T; Nagano T; Nagase S; Nagashima T; Nagata K; Nagato T; Nagumo H; Naka M; Nakagawa O; Nakagawa M; Nakamaru T; Nakazawa A; Narita I; Nawa T; Nezu M; Nishi S; Nishino H; Noda Y; Noritake M; Oba S; Oguchi H; Oguchi S; Okabe A; Okada K; Okada S; Okajima H; Okayasu T; Okoshi T; Okubo M; Okuda Y; Osada K; Osawa Y; Osonoi T; Owada A; Oya M; Oya S; Ozaki H; Saeki M; Saito A; Saito M; Saito T; Saito Y; Saji M; Sakata I; Sasagawa Y; Sato K; Sato K; Sato N; Seguchi H; Shimada K; Shimano H; Shimazaki K; Shimizu H; Shimizu Y; Shimotori T; Shionoiri F; Shitara M; Suda H; Sugamata S; Sugaya T; Sugimoto K; Suzuki H; Suzuki S; Suzuki Y; Suzuki Y; Takagi T; Takahashi A; Takahashi M; Takahashi S; Takahashi S; Takamatsu M; Takatama M; Takayama Y; Takei K; Takenaga K; Takizawa S; Tanabe H; Tanaka K; Tani M; Taya T; Tomita M; Tomono S; Toyoda T; Tsurushima Y; Tsutsui M; Ueda Y; Ueno M; Ushiyama K; Watanabe K; Watanabe T; Watanabe Y; Yamada N; Yamagata K; Yamane Y; Yamashita N; Yato S; Yazawa Y; Yokoyama A; Yokoyama M; Yonezawa T; Yoshida J; Abo Y; Adachi M; Akahoshi M; Aoi N; Aoki M; Arai T; Asai M; Asano K; Azuma H; Baba M; Chimori K; Deguchi K; Eguchi T; Endo S; Enomoto N; Fujihata T; Fujii E; Fujimoto N; Fujioka M; Fujita K; Fujiwara H; Goto N; Haga T; Hanaki Y; Haruta J; Hasegawa H; Hasegawa H; Hasegawa M; Hasegawa R; Hattori H; Hattori J; Hattori Y; Hattori Y; Hayakawa K; Hayashi K; Hayashi T; Hayashi T; Hibi N; Hieda N; Hikita H; Hirai M; Hiramitsu S; Hirano T; Hirano Y; Hirayama H; Hirota H; Hishida H; Hori Y; Horie K; Hoshino T; Ichida S; Ichikawa T; Iguchi A; Iida K; Ikeda K; Ikeda N; Imaeda K; Inaba N; Inaguma D; Inoue K; Io K; Isaka N; Ishiguro M; Ishiguro T; Ishihara H; Ishii J; Ishikura N; Ishizaki S; Isobe S; Itatsu T; Ito A; Ito H; Ito H; Ito I; Ito J; Ito T; Ito Y; Itoh M; Iwasaki Y; Iwasaki Y; Iwase M; Jinno M; Jinno Y; Kabasawa H; Kakehi H; Kambara K; Kamiya H; Kamiya H; Kamiya M; Kamiya T; Kaneda N; Kani A; Kato K; Kato N; Kato N; Kato R; Kato T; Kato T; Kato Y; Kato Y; Katsumata H; Kawabe T; Kawada T; Kawakami K; Kawase K; Kayama M; Kikuchi S; Kimura G; Kimura N; Kin Y; Kinoshita M; Kobayashi T; Koda A; Koga M; Koie S; Koike T; Kojima H; Kojima S; Komata R; Kondo J; Kondo K; Kondo T; Kongo M; Kosaki T; Kumon S; Kuraki T; Kurita T; Kuroda M; Kurokawa H; Kusakabe A; Kushima M; Kushimoto H; Kuzuya M; Makino K; Mase M; Masuda Y; Masuoka H; Matsubara T; Matsubara T; Matsuki T; Matsunami T; Matsuoka A; Matsushima Y; Matsuura R; Matsuyama H; Minagawa T; Minami M; Minami N; Minatoguchi S; Miura Y; Miwa M; Miyabe H; Miyagi Y; Miyata H; Miyata M; Mizuno G; Mizuno M; Mizuno R; Mizuno Y; Mizutani K; Mokuno T; Mori H; Mori H; Mori N; Mori N; Mori S; Mori T; Mori Y; Mori Y; Morimoto S; Morita H; Motai Y; Mukawa H; Murakami K; Murase M; Murata K; Nagaoka N; Nagasaka A; Nagata M; Naito A; Naito M; Nakae M; Nakahara K; Nakajima S; Nakamura H; Nakamura S; Nakamura T; Nakano H; Nakano K; Nakano T; Nakazawa K; Narumi J; Naruse H; Niinomi M; Nishikawa H; Nishikawa M; Nishimura H; Nishimura K; Nishino M; Niwa H; Nogimori T; Nomura M; Nonoda K; Obe T; Ogawa H; Ohashi H; Ohashi N; Ohtsuki M; Oishi M; Okada M; Okada M; Okamoto N; Okamoto R; Okamoto

S; Okamoto Y; Oki T; Okinaka T; Okuma T; Okumura A; Okumura K; Ono J; Ono M; Onodera T; Osugi K; Osugi S; Oya T; Oyama K; Ri Y; Saito S; Sakagami M; Sakakibara M; Sakakura K; Sakata K; Sakuma N; Samejima Y; Sano H; Sano T; Sarai M; Sasai K; Sassa H; Sawai Y; Shimaji T; Shimaji Y; Shimano S; Shimauchi A; Shimizu A; Shimizu M; Shin K; Shiraki S; Sone T; Suga T; Sugata Y; Sugimoto Y; Sugimura Y; Sugiura A; Sugiyama S; Sumida Y; Suwaki T; Suzuki A; Suzuki K; Suzumura Y; Taira A; Takada N; Takada N; Takahama S; Takahashi R; Takase K; Takashima M; Takatsu H; Takaya T; Takayama S; Takeda N; Takeda N; Takizawa A; Tameda Y; Taminato T; Tanaka H; Tanaka S; Tanaka T; Tanaka Y; Tatsuta Y; Terada H; Toba T; Tokita Y; Tokunaga K; Tomihara H; Tomita M; Tomita M; Tomita Y; Torigoe M; Torikai K; Tozaki T; Tsuboi H; Tsuchiya A; Tsukamoto T; Tsukiyama K; Tsuyuki M; Ueda M; Uemura A; Uranishi H; Urano O; Urushida T; Wakida Y; Watanabe A; Watanabe E; Watanabe G; Watanabe S; Watanabe Y; Yamada K; Yamada N; Yamada Y; Yamagata K; Yamamori I; Yamamoto M; Yamamoto N; Yamamoto T; Yamamoto Y; Yamana T; Yamashita M; Yamauchi T; Yamazaki A; Yamazaki K; Yamazaki M; Yano Y; Yasuda K; Yasuda Y; Yasui T; Yokoi H; Yokoi Y; Yokoyama N; Yokoyama S; Yoneyama S; Yoshida J; Yoshida M; Yoshida S; Yoshikane M; Yoshikane M; Yoshimura H; Yoshioka S; Adachi M; Akiyama H; Akiyama I; Amano K; Amano M; Anaguchi R; Aoki N; Arako M; Asada K; Asakuma S; Ashida K; Awata N; Chiba H; Chimori Y; Chinzei T; Ekawa K; Fujimoto M; Fujimura Y; Fujioka Y; Fujiwara M; Fukunaga H; Fukuoka Y; Fuseno H; Hachiya T; Harada H; Harada-Shiba M; Harano A; Harano Y; Hasegawa T; Hashimoto K; Hashimoto S; Hashimoto T; Hasuike N; Hayashi H; Haze K; Hino M; Hirai T; Hirano H; Hiura Y; Horibe I; Hoshida S; Hosoai H; Hosoi F; Hozumi T; Hyodo E; Ichida K; Ida T; Idogaki A; Iharada Y; Iida M; Ikeda H; Ikeoka K; Imamura M; Imbe H; Inagaki K; Inoue M; Ishigami H; Ishihara K; Ishii T; Ishikawa H; Ishitani K; Isotani H; Iwamoto K; Iwasaka T; Iwasaki T; Jiko H; Jikuhara T; Kadoya Y; Kajikawa K; Kamihata H; Kano Y; Kashiwagi Y; Kasuga M; Kawamori D; Kawarabayashi T; Kazumi T; Kimura Y; Kishida O; Kishitani Y; Kitagaki Y; Kitagawa Y; Kitaoka H; Kobatake T; Kobayashi S; Kobayashi T; Kobayashi Y; Kodama N; Koh H; Koida S; Kondo T; Korenori S; Kosaki A; Kosugi K; Kubota H; Kubota J; Kubota S; Kuchii M; Kumada M; Kurioka K; Maeda E; Maeda Y; Maehashi N; Majima M; Majima T; Makimura H; Masai M; Masazumi T; Masuda K; Masuda S; Masutani M; Matsubara H; Matsubara N; Matsuda Y; Matsumoto A; Matsushima H; Matsuyama T; Matsuzaki K; Minami Y; Mitani K; Miyai T; Miyakoshi K; Mori Y; Morimoto S; Morita H; Morita T; Mukohara N; Murata Y; Nagae K; Nagai T; Nagao M; Naito K; Naka K; Naka Y; Nakagawa T; Nakajima T; Nakamichi J; Nakamichi T; Nakamura S; Nakamura S; Nakamura T; Nakata A; Naruse H; Nishibe A; Nishibori Y; Nishimura A; Nishiuchi A; Nishiyama M; Nishizawa Y; Nogami H; Nomura M; Nonaka Y; Nose A; Nozaki H; Nukada T; Obana T; Ofuchi N; Ogawa W; Ohashi M; Okabayashi Y; Okahara K; Okai K; Okamoto Y; Oki C; Okigaki M; Okumachi F; Okuyama Y; Omatsu T; Omura M; Ono M; Ono Y; Oribe T; Oshima Y; Otsuji S; Otsuka M; Otsuki T; Oyagi M; Ozawa S; Sakaguchi H; Sakamoto T; Sano H; Sato T; Sekine Y; Seo T; Shibasaki Y; Shimizu H; Shimmei H; Shiomi M; Shoji T; Shouzu A; Sorachi K; Sugano W; Sugitani Y; Sugiura T; Suzuki M; Suzuki N; Taguchi A; Taguchi H; Takada M; Takahashi H; Takatsu Y; Takayama Y; Takehara M; Takemura K; Takeuchi T; Takeuchi Y; Tanaka A; Tanaka H; Tanaka S; Tanouchi J; Tarumi N; Tateyama H; Tatsumi N; Tatsuta H; Terai K; Terasaki J; Torii H; Toyoda N; Tsuda I; Tsuji H; Tsujii S; Tsujino K; Tsuneda M; Ueda K; Ueda S; Uehara S; Uemura S; Umeda O; Ushiroyama T; Wanaka M; Watanabe M; Watanabe N; Yagi J; Yamada S; Yamaguchi T; Yamamoto A; Yamamoto A; Yamamoto J; Yamamoto Y; Yamano S; Yamazaki Y; Yasutomi N; Yo H; Yoshida O; Yoshino F; Yuasa F; Yuba M; Akashi K; Asawa Y; Azuma A; Chikayama S; Doi K; Fujimoto R; Fujimura H;

Fujita H; Fujita J; Fujita K; Fukumoto H; Furukawa K; Hachimine H; Hasegawa G; Hata T; Hatta T; Hidaka H; Higashino K; Hirata F; Hirose K; Hyogo M; Ichida T; Ikeda Y; Ikenoue K; Imai H; Inagake H; Inoue K; Inoue N; Inoue T; Irino J; Itoh H; Kajinami T; Kambayashi M; Kambayashi T; Kashiwagi A; Kayawake S; Kikkawa R; Koide M; Kojima H; Kondo M; Konishi M; Kono S; Kuno M; Kusudo K; Manabe H; Matsuo A; Matsuoka N; Mitsunami K; Miyao K; Miyazaki T; Miyoshi Y; Morimoto M; Nagao M; Nakagawa T; Nakajima H; Nakamura K; Nakamura K; Nakamura N; Nakanishi M; Nakano R; Nakaura M; Nishi S; Nishino K; Nishio Y; Nishiyama A; Ogino K; Oguri S; Oishi M; Okamoto Y; Okuyama Y; Omoto K; Ono S; Onodera H; Oshima C; Sato A; Shichiri G; Shigematsu K; Shigeta H; Shimosaka Y; Sugiyama H; Suzuki E; Tamaki S; Tamura H; Tanaka T; Tanaka T; Taniguchi Y; Tokura T; Tomioka N; Tomizawa S; Ueda K; Urakaze M; Watanabe Y; Yamahara Y; Yamaoka O; Yorioka S; Yoshida T; Yoshitake T; Amioka H; Ata K; Ban N; Chishiro T; Egusa G; Endo K; Eto M; Fujii H; Fujii T; Fujii T; Fujita T; Hamada Y; Hasegawa K; Hattori Y; Hayashi K; Hirata S; Hirokane Y; Hirota S; Hori K; Inoue M; Inoue R; Ishikawa S; Ishioka T; Ito M; Iwamoto A; Iwasaki S; Iwasaki Y; Izumi S; Kahara M; Kajikawa Y; Kajiwara K; Kaku K; Kamisaka K; Kamiya A; Karino T; Kassai R; Katsurada E; Kawamura T; Kazusa S; Kimura K; Kiso T; Kobayashi J; Kohno M; Koide H; Kuga Y; Kurihara N; Kusumoto T; Maesako N; Makiyama M; Matsubara K; Matsuda M; Matsuki M; Matsumoto T; Matsuno Y; Matsushita H; Matsuura Y; Matsuzaki M; Michihata T; Miki H; Mino Y; Mitani Y; Mitsuda H; Mitsunobu F; Miyake H; Miyake Y; Mizuno T; Murakami T; Naito M; Nakahama H; Nakamaru M; Nakamura N; Nakamura N; Nakanishi S; Nambu S; Nishida S; Nishimura S; Norimune S; Ochi N; Oda K; Ohtani H; Oi S; Oiwa J; Okada S; Okamoto M; Okuno T; Onoyama S; Ookuchi S; Ota T; Ozaki M; Saito M; Saito M; Sakamoto E; Sano K; Santo Y; Sasaki T; Sato S; Sato T; Sawada C; Shibata G; Shigemasa C; Shigernoto K; Shimozaki Y; Shingu T; Shirota K; Sumii K; Sumitomo S; Tadehara F; Takao Y; Takata K; Takehisa Y; Takeuchi T; Takeuchi Y; Teshima S; Toda H; Tsujiyama S; Tsukamoto Y; Tsutsui Y; Uchida T; Uehara S; Uehara Y; Umemoto S; Watanabe M; Yamamoto H; Yamamoto H; Yamamoto S; Yamauchi K; Yamawaki Y; Yamazaki J; Yoneda M; Yoshida A; Yoshida T; Yoshikawa K; Yoshino F; Yoshitomi H; Abe M; Akutsu H; Fujii Y; Fujikawa Y; Fujimoto H; Fujimoto S; Fujioka H; Fukuda H; Fukuyama T; Funada J; Habara H; Hamamoto T; Hara Y; Hasegawa K; Hiasa Y; Higaki J; Hiwada K; Honda T; Ikeda S; Imamura Y; Jo T; Kameoka H; Kato M; Kawamura M; Kimura M; Kohara K; Kojima A; Makino E; Manabe K; Masugata H; Matsuo H; Matsuoka N; Mineoi K; Miyamoto K; Mizushige K; Mizuta S; Murao K; Nagai T; Nakagawa H; Nishimoto H; Ochi T; Ohmori K; Ohtsuka T; Okabayashi K; Okada H; Oki Y; Okubo S; Otani T; Sakamoto S; Sasada Y; Sato M; Seida M; Senda S; Sengoku A; Shimizu I; Shirakami A; Sueda S; Suzuki M; Takada Y; Takagi Y; Takezaki M; Tanaka Y; Tsuchihashi T; Tsutsui Y; Uchida K; Ueta I; Wada Y; Watanabe K; Watanabe K; Yabu Y; Yamamoto M; Yoshimatsu T; Yukiiri K; Abe K; Abe N; Abe Y; Akaboshi R; Akizuki N; Amamoto T; Arakawa K; Araki Y; Arima K; Asato H; Ashizawa N; Baba M; Biro S; Chijiwa H; Doi A; Doi N; Eguchi S; Fujimura N; Fujino M; Fujino T; Fujisawa K; Fujishima M; Fujiura Y; Fukiyama K; Fukuda H; Fukui J; Fukushima H; Furukawa K; Furusho N; Gondo H; Goto Y; Gotoh H; Hamada H; Hamaguchi K; Hara N; Hashimoto K; Hata S; Hayashi H; Hayashi Y; Hazuku T; Higa T; Higuchi K; Hirano J; Hisano T; Ide T; Iida K; Ikeda H; Ikeda S; Ikeda Y; Imamura M; Imoto N; Inada C; Inokuchi T; Inou T; Inoue J; Inoue M; Inoue M; Inoue T; Ishibatake H; Ishii Y; Itaya R; Ito A; Iwami K; Iwasaki Y; Iwata I; Jinbayashi N; Jinnouchi H; Jinnouchi T; Kagiyama Y; Kaieda H; Kaji Y; Kaku H; Kaku T; Kameko M; Kamido H; Kamitsuchihashi H; Kamogawa T; Kanaya S; Kariya S; Katsuda Y; Kawabe K; Kawai H; Kawashima H; Kawazoe N; Kikuchi Y; Kitano K; Kodama H;

Corporate Author: MEGA Study Grp
CORPORATE SOURCE: Mitsukoshi Hlth & Welfare Fdn, Tokyo 1600023, Japan
COUNTRY OF AUTHOR: Japan
SOURCE: CIRCULATION JOURNAL, (SEP 2004) Vol. 68, No. 9, pp. 860-867.
ISSN: 1346-9843.
PUBLISHER: BLACKWELL PUBLISHING ASIA, 54 UNIVERSITY ST, P O BOX 378, CARLTON, VICTORIA 3053, AUSTRALIA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 28
ENTRY DATE: Entered STN: 2 Oct 2004
Last Updated on STN: 2 Oct 2004
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB Background Although cholesterol management reportedly reduces fatal and non-fatal coronary heart disease (CHD) events in subjects with or without evident atherosclerotic disease, it is still uncertain whether these benefits extend to Japanese.

Methods and Results The study group comprised 8,009 subjects with mildly elevated total cholesterol who were randomized to treatment with 10-20 mg pravastatin plus diet (2,691 women, 1,267 men) or diet alone (2,758 women, 1,293 men). The groups were extremely well balanced with respect to baseline demographics and risk factors such as blood pressure and plasma lipids. Over a 5-year period of follow-up, the primary end-points will be a composite of fatal and non-fatal coronary events. Secondary end-points will include stroke and transient ischemic attack, all cardiovascular events and total mortality. Conclusions The 2 groups will be followed up until the end of March 2004 and end-points will be analyzed by full analysis set.

***** QUERY RESULTS *****

=> d his l20

(FILE 'HCAPLUS' ENTERED AT 12:02:30 ON 19 FEB 2009)
L20 11 S L10 OR L13 OR L19

=> d que l20
L1 6507 SEA FILE=HCAPLUS ABB=ON PLU=ON MALT/CT
L2 24654 SEA FILE=HCAPLUS ABB=ON PLU=ON BEVERAGES+UF/CT
L3 2865 SEA FILE=HCAPLUS ABB=ON PLU=ON MALT? (S) (L2 OR BEVERAGE# OR SOFT DRINK# OR SODA POP#)
L4 1618 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE?
L5 136 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE LYASE
L6 3 SEA FILE=HCAPLUS ABB=ON PLU=ON FATTY ACID# (S) (HPLS OR HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXID E ISOMEASE)
L7 73 SEA FILE=HCAPLUS ABB=ON PLU=ON HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXIDE ISOMERASE
L8 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND L4
L9 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 AND ((L5 OR L6 OR L7))
L10 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L8 OR L9
L11 6930 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROPEROXIDES+UF/CT
L12 9 SEA FILE=HCAPLUS ABB=ON PLU=ON L11 AND L1
L13 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L12 NOT L10
L14 3469 SEA FILE=HCAPLUS ABB=ON PLU=ON (HYDROPEROXID? OR L11) (S) (FATTY ACID# OR LYASE? OR HPLS OR HOMOLYTIC HPLS OR ISOMERASE)
L16 55802 SEA FILE=HCAPLUS ABB=ON PLU=ON ANALYSIS/CT
L17 6137 SEA FILE=HCAPLUS ABB=ON PLU=ON SCREENING/CT
L18 888 SEA FILE=HCAPLUS ABB=ON PLU=ON (L1 OR MALT#) (W) (SCREEN? OR ASSAY? OR L16 OR L17)
L19 3 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 AND (L11 OR L14)
L20 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L10 OR L13 OR L19

=> d his l34

(FILE 'AGRICOLA, BIOSIS, BIOTECHNO, FSTA, SCISEARCH' ENTERED AT 12:19:25 ON 19 FEB 2009)
L34 12 S L32 AND L33

=> d que l34
L7 73 SEA FILE=HCAPLUS ABB=ON PLU=ON HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXIDE ISOMERASE
L11 6930 SEA FILE=HCAPLUS ABB=ON PLU=ON HYDROPEROXIDES+UF/CT
L14 3469 SEA FILE=HCAPLUS ABB=ON PLU=ON (HYDROPEROXID? OR L11) (S) (FATTY ACID# OR LYASE? OR HPLS OR HOMOLYTIC HPLS OR ISOMERASE)
L28 3370 SEA L7 OR L14
L32 30 SEA L28 AND MALT?
L33 9170446 SEA SCREEN? OR ASSAY? OR ANALY?
L34 12 SEA L32 AND L33

=> dup rem l20 l34
PROCESSING COMPLETED FOR L20
PROCESSING COMPLETED FOR L34
L42 16 DUP REM L20 L34 (7 DUPLICATES REMOVED)
ANSWERS '1-11' FROM FILE HCAPLUS
ANSWERS '12-14' FROM FILE BIOSIS
ANSWER '15' FROM FILE FSTA
ANSWER '16' FROM FILE SCISEARCH

=> d l42 1-11 ibib abs hitind; d l42 12-16 ibib ab hitind

L42 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 3
ACCESSION NUMBER: 2005:1274104 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 144:127963
TITLE: Enantioselective formation pathway of a trihydroxy fatty acid during mashing

AUTHOR(S): Garbe, Leif-Alexander; Huebke, Holger; Tressl, Roland
CORPORATE SOURCE: Institute of Biotechnology, Molecular Analysis, Technische Universitaet Berlin (TUB), Berlin, D-13353, Germany
SOURCE: Journal of the American Society of Brewing Chemists (2005), 63(4), 157-162
CODEN: JSBCD3; ISSN: 0361-0470
PUBLISHER: American Society of Brewing Chemists, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The lipoxygenases from barley (LOX-1) and malt (LOX-1 and LOX-2) catalyze the peroxidn. of linoleic acid into 9-hydroperoxy-10E,12Z-octadecadienoic acid and 13-hydroperoxy-9Z,11E-octadecadienoic acid (HPODE). LOX-1 and LOX-2 accept free linoleic acid and nonpolar and polar glycerol esterified linoleic acid as substrates. The reactive hydroperoxides (HPODE) are e.g., reduced to the corresponding hydroxides (HODE). In finished malt, 9 ppm free HODE, 100 ppm triacylglycerol esterified HODE, and 66 ppm polar esterified HODE were analyzed by isotope dilution assay (18O1-13-HODE). Rearrangement products of HPODEs, the epoxyols, are hydrolyzed to trihydroxyoctadecenoic acids (THOE). These THOE isomers were investigated in detail. The positional isomers of THOE, 9,10,13- and 9,12,13-THOE, represent eight diastereomers and eight enantiomers, resp. During mashing, a hitherto unknown enzyme cascade is activated, which only leads to the formation of (9S,12S,13S)-THOE that can be analyzed as free acid in wort and finally in beer. This reaction sequence is highly regio- and stereoselective and may serve as a plant signaling pathway. The 9S,12S,13S-THOE isomer was formerly described as fungicide in rice blast disease and recently as an antiviral compound Compared with mono- and dihydroxy fatty acids, the trihydroxy fatty acids are poorly degraded by yeast, and thus, accumulate in beer.
CC 17-13 (Food and Feed Chemistry)
ST beer mashing trihydroxy fatty acid
IT Beer
Malt
Mashing
(enantioselective formation pathway of trihydroxy fatty acid during mashing)
IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(hydroxy; enantioselective formation pathway of trihydroxy fatty acid during mashing)
IT Isomers
(positional; enantioselective formation pathway of trihydroxy fatty acid during mashing)
IT 9029-60-1, Lipoxygenase 390368-46-4, Trihydroxyoctadecenoic acid
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(enantioselective formation pathway of trihydroxy fatty acid during mashing)
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 4
ACCESSION NUMBER: 2004:3060 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 140:25161
TITLE: Method for screening malt, and process for producing foaming malt beverage
INVENTOR(S): Kuroda, Hisao; Furusho, Shigeki; Kojima, Hidetoshi
PATENT ASSIGNEE(S): Sapporo Breweries Limited, Japan
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2004001066 | A1 | 20031231 | WO 2003-JP7887 | 20030620 |
| W: CA, US | | | | |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR | | | | |
| JP 2004016202 | A | 20040122 | JP 2002-180315 | 20020620 |
| CA 2490716 | A1 | 20031231 | CA 2003-2490716 | 20030620 |
| EP 1533384 | A1 | 20050525 | EP 2003-760929 | 20030620 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, SK | | | | |
| US 20060105078 | A1 | 20060518 | US 2005-517311 | 20051011 |

PRIORITY APPLN. INFO.: JP 2002-180315 A 20020620
WO 2003-JP7887 W 20030620

AB A method for screening malt is provided, which is characterized by determining the fatty acid hydroperoxide-lyase activity of malts. Also provided is a process for producing a foaming malt beverage, which is characterized by using the malt selected by screening for a low fatty acid hydroperoxide-lyase activity.
IC ICM C12Q001-527
ICS G01N033-50; G01N033-15; C12C001-16
CC 9-2 (Biochemical Methods)
Section cross-reference(s): 10, 17
ST malt screening hydroperoxide lyase
foaming beverage
IT Hydroperoxides
RL: ANT (Analyte); ANST (Analytical study)
(and degradation product; method for screening malt,
and process for producing foaming malt beverage)
IT Beverages
(malt; forming; method for screening malt
, and process for producing foaming malt beverage)
IT Gas chromatography
HPLC
Malt
(method for screening malt, and process for
producing foaming malt beverage)
IT 71833-11-9, Lyase, hydroperoxide
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical
study); BIOL (Biological study)
(fatty acid; method for screening
malt, and process for producing foaming malt
beverage)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1993:537674 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 119:137674
ORIGINAL REFERENCE NO.: 119:24673a,24676a
TITLE: Determination of fatty acid hydroperoxides produced
during the production of wort
AUTHOR(S): Kobayashi, Naoyuki; Kaneda, Hirotaka; Kano, Yukinobu;
Koshino, Shouhei
CORPORATE SOURCE: Brew. Res. Lab., Sapporo Brew. Ltd., Yaizu, 425, Japan
SOURCE: Journal of the Institute of Brewing (1993), 99(2),
143-6
CODEN: JINBAL; ISSN: 0368-2587
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Linoleic and linolenic acid hydroperoxides in malt, mash, or wort were determined with high sensitivity and high selectivity by the chemiluminescence-high performance liquid chromatog. (CL-HPLC) method using isoluminol-microperoxidase solution as a luminescing reagent. The determination limit of this method for both hydroperoxides was 0.1 μM in mash or wort. During the mashing in a laboratory mash bath, the hydroperoxides started to increase just after mashing-in, reached a maximum at 65°, and then decreased. Though the hydroperoxides were detected in mash just before the lautering in a pilot scale brewing, they disappeared during the lautering and could not be detected during the subsequent stages of wort production Therefore, it was thought that the mashing process is the most important of the lipid oxidation reactions during wort production It is also expected that the CL-HPLC method can give useful information on lipid oxidation mechanisms during wort production
CC 17-1 (Food and Feed Chemistry)
IT Malt
Mashes
Worts
(fatty acid hydroperoxides determination and content in)
IT Hydroperoxides
RL: ANT (Analyte); ANST (Analytical study)
(fatty alkyl, carboxy, determination and content of, in wort production)

L42 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2007:258097 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 146:267936
TITLE: Identification of the gene causative of aging smell of
malt beverages and application to
the development of malt with reduced
off-flavor
INVENTOR(S): Takeda, Kazuyoshi; Sato, Kazuhiro; Kuroda, Hisao
PATENT ASSIGNEE(S): National University Corporation Okayama University,
Japan; Sapporo Breweries, Ltd.
SOURCE: PCT Int. Appl., 48pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2007026698 | A1 | 20070308 | WO 2006-JP316980 | 20060829 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

| | | | | |
|---|---|---|---|---|
| JP 2007061017 | A | 20070315 | JP 2005-252329 | 20050831 |

PRIORITY APPLN. INFO.: JP 2005-252329 A 20050831

AB The gene encodes the 9-/13-HPL (9-/13-fatty acid hydroperoxide lyase) is identified as the gene causative of the aging smell of malt drinks. Information of the the 9-/13-HPL gene nucleotide sequence and amino acid sequence of enzyme product are claimed. The 9-/13-HPL gene is deleted or inactivated by the mutagenesis to eliminate the enzyme activity to generate the odor substances such as 2(E)-nonenal in malts. The transformant malts can be provided in the production of the beer with reduced off-flavors (aging smell).

CC 3-2 (Biochemical Genetics)
Section cross-reference(s): 7, 11, 16, 17

ST barley fatty acid hydroperoxide lyase cDNA sequence; hydroperoxide lyase HPL gene knockout reduced aging smell malt; beer hydroperoxide lyase deleted malt reduced aging smell malt

IT Gene, plant
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(9-/13-HPL; identification of gene causative of aging smell of malt drink and application to development of malt with reduced off-flavor)

IT Odor and Odorous substances
(elimination of; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)

IT Gene targeting
(gene knock-out; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)

IT Barley
Fermentation
Hordeum vulgare
Malt
Molecular cloning
Mutagenesis
Protein sequences
Transformation, genetic
cDNA sequences
(identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)

IT Beer
(identification of gene causative of aging smell of malt drink and application to development of malt with reduced off-flavor)

IT 926368-26-5
RL: ADV (Adverse effect, including toxicity); PRP (Properties); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(amino acid sequence; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)

IT 71833-11-9, Hydroperoxide lyase
RL: ADV (Adverse effect, including toxicity); BSU (Biological study,

unclassified); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(gene 9-/13-HPL for; identification of gene causative of aging smell of malt drink and application to development of malt with reduced off-flavor)
IT 926368-27-6
RL: ADV (Adverse effect, including toxicity); PRP (Properties); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(nucleotide sequence; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)
IT 18829-56-6
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(odor substance produced by hydroperoxide lyase; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)
IT 5502-91-0, Linoleic acid, 9-hydroperoxide 7324-21-2, Linoleic acid, 13-hydroperoxide
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(substrate; identification of gene causative of aging smell of malt beverages and application to development of malt with reduced off-flavor)
IT 926369-57-5 926369-64-4 926369-65-5
RL: PRP (Properties)
(unclaimed nucleotide sequence; identification of the gene causative of aging smell of malt beverages and application to the development of malt with reduced off-flavor)
IT 926307-15-5 926369-58-6 926369-59-7 926369-60-0 926369-61-1 926369-62-2 926369-63-3 926369-66-6
RL: PRP (Properties)
(unclaimed protein sequence; identification of the gene causative of aging smell of malt beverages and application to the development of malt with reduced off-flavor)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2005:1336489 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 145:334716
TITLE: An early development of the nonenal potential in the malting process
AUTHOR(S): Guido, L. F.; Boivin, P.; Benismail, N.; Goncalves, C. R.; Barros, A. A.
CORPORATE SOURCE: Faculty of Science, Chemistry Department, University of Porto, Oporto, P-4169-007, Port.
SOURCE: Proceedings of the Congress - European Brewery Convention (2005), 30th, 77/1-77/13
CODEN: EBCPA6; ISSN: 0367-018X
PUBLISHER: Fachverlag Hans Carl GmbH
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB The scarce knowledge of the significance of enzymic oxidation of polyunsatd. fatty acids throughout the malting process led the authors to conduct studies on the monitoring of the compds. directly involved in the reaction. Lipoxygenase (LOX) activity, linoleic acid 9- and 13-hydroperoxides and the nonenal potential were assessed for the top and bottom malt layers in various stages of an industrial kilning process. Significant differences were obtained between the lower and upper malt bed, suggesting that the moisture content and temperature gradient play a key role on the production of E-2-nonenal during the early stages of kilning. The residual nonenal potential already present in the finished malt (malt-RNP) may account for approx. 25 % of the total nonenal potential in the mash, depending on the residual LOX activity. LOX showed a good degree of relationship with the nonenal potential for micro-malts ($r = 0.79$, $p < 0.05$), whereas for com. malts no correlation was found. These results suggest that the malt-RNP plays a prominent role for com. malts, probably owing to the great heterogeneity observed for the malt bed in the industrial kiln. On the other hand, a major role for LOX during mashing was observed for micro-malts, emphasizing that the intrinsic properties of the barley ad malt may be overwhelmed by technol. factors. Therefore, kilning programs should be adopted in order to minimize formation of malt-RNP during the drying phase of the malting process.
CC 17-13 (Food and Feed Chemistry)
IT Beer
Hordeum vulgare
Kilns
Lipid oxidation
Malt
Malting

Mashes
(early development of nonenal potential in malting process)
IT Aldehydes, biological studies
Enzymes, biological studies
Hydroperoxides
Lipid oxidation
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(early development of nonenal potential in malting process)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:157519 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 140:180255
TITLE: Yeast fermentation process for producing glutathione
INVENTOR(S): Benedetti, Alberto; Berardi, Enrico Giuseppe Roberto; Manzoni, Matilde; Nichele, Marina; Pagani, Hermes; Rollini, Manuela
PATENT ASSIGNEE(S): Gnosis SRL, Italy
SOURCE: Eur. Pat. Appl., 20 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 1391517 | A1 | 20040225 | EP 2002-17906 | 20020809 |
| EP 1391517 | B1 | 20080213 | | |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| AT 386134 | T | 20080315 | AT 2002-17906 | 20020809 |
| ES 2300403 | T3 | 20080616 | ES 2002-17906 | 20020809 |
| US 20040048337 | A1 | 20040311 | US 2003-609561 | 20030701 |
| US 6902912 | B2 | 20050607 | | |
| JP 2004129647 | A | 20040430 | JP 2003-270328 | 20030702 |
| CA 2436682 | A1 | 20040209 | CA 2003-2436682 | 20030807 |
| KR 2004014360 | A | 20040214 | KR 2003-55071 | 20030808 |

PRIORITY APPLN. INFO.: EP 2002-17906 A 20020809
AB There is disclosed a fermentation process for producing glutathione which comprises (a) the obtainment of a biomass pre-culture by pre-cultivating, in aerobic conditions, a strain of a glutathione producing yeast wherein the glutathione content per biomass unit is higher than 1.2% weight/weight; (b) the cultivation, in aerobic conditions, of the resulting biomass pre-culture such that the resulting biomass d. is higher than 50 g/L; (c) the activation of the cultured biomass; and (d) the recovery of the cultured biomass, extracting glutathione at a pH equal to or lower than 6 and purifying the resulting glutathione. The process allows to obtain glutathione with high yields and relatively low costs.
IC ICM C12P021-02
ICS C12R001-645
CC 16-5 (Fermentation and Bioindustrial Chemistry)
IT Malt
(extract; yeast fermentation process for producing glutathione)
IT Alcohols, processes
Aldehydes, processes
Amino acids, processes
Carbohydrates, processes
Caseins, processes
Fats and Glyceridic oils, processes
Fatty acids, processes
Hydrocarbons, processes
Hydroperoxides
Peptones
Peroxides, processes
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)
(yeast fermentation process for producing glutathione)
REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2004:47467 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 140:302596
TITLE: Laboratory-scale studies of the impact of oxygen on mashing

AUTHOR(S): Stephenson, W. H.; Biawa, J.-P.; Miracle, R. E.; Bamforth, C. W.
CORPORATE SOURCE: Department of Food Science & Technology, University of California, Davis, CA, 95616-8598, USA
SOURCE: Journal of the Institute of Brewing (2003), 109(3), 273-283
CODEN: JINBAL; ISSN: 0046-9750
PUBLISHER: Institute & Guild Brewing
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An assessment of the impact of oxygen and hydrogen peroxide on mashing and wort parameters has been made on a laboratory scale. Oxygen has been stridently eliminated by using an anaerobic chamber during mash anal. Addnl. the relative importance of proanthocyanidin species has been assessed by comparing the behavior of "conventional" malt and a malt produced from a low proanthocyanidin variety. It seems that oxygen and peroxide act independently in causing the oxidation of thiol-containing materials and polyphenols in mashes and that oxygen is not primarily exerting its impacts through the intermediacy of peroxide. The removal of thiols (presumably at least in part through the production of disulfide bridges between proteins) and of polyphenols (presumably via polymerization) both contribute to increased wort turbidity and decreased rates of wort separation after mashing. Three inhibitors (nordihydroguaiaretic acid, ethylenediamenetetraacetate and potassium cyanide) have been employed in an attempt to differentiate between enzymic and non-enzymic events and also to identify whether lipoxygenase and peroxidase are catalyzing key events. While it seems that peroxidase has a key role in catalyzing the oxidation of polyphenols by H2O2, it does not appear that either peroxidase or lipoxygenase is involved in the removal of measurable thiol. Nonetheless a significant proportion of the thiol elimination is likely enzyme-catalyzed. The authors were unable to demonstrate the production of hydroperoxides in mashes, but added hydroperoxide is undetectable, which suggests that these materials are either lost by onward conversion or by adsorption onto spent grains.
CC 17-13 (Food and Feed Chemistry)
IT Malt
Mashing
Turbidity
Worts
(oxygen and hydrogen peroxide impact on mashing and wort parameters)
IT Hydroperoxides
Proanthocyanidins
Thiols, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(oxygen and hydrogen peroxide impact on mashing and wort parameters)
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:521961 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 137:90190
TITLE: Construction of mutant barley lipoxygenase 1 gene, characterization of the mutant lipoxygenase 1 with severely reduced activity, and use of the low-lipoxygenase 1 barley cultivar in brewing
INVENTOR(S): Douma, Anneke Christiana; Doderer, Albert; Cameron-Mills, Varena; Skadhauge, Birgitte; Bech, Lene Molskov; Schmitt, Natalie; Heistek, Jolanda Carolina; Van Mechelen, Johannes Reinier
PATENT ASSIGNEE(S): Carlsberg Research Laboratory, Den.; Heineken Technical Services B.V.; Brasseries Kronenbourg
SOURCE: PCT Int. Appl., 112 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| WO 2002053720 | A1 | 20020711 | WO 2000-IB2045 | 20001229 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW | | | | |
| RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG | | | | |
| AU 2000280392 | A1 | 20020716 | AU 2000-280392 | 20001229 |
| CA 2433250 | A1 | 20020711 | CA 2001-2433250 | 20010122 |
| WO 2002053721 | A1 | 20020711 | WO 2001-IB207 | 20010122 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 2001230454 A1 20020716 AU 2001-230454 20010122
EP 1346030 A1 20030924 EP 2001-902597 20010122
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR
EE 200300257 A 20031015 EE 2003-257 20010122
BR 2001016579 A 20040420 BR 2001-16579 20010122
JP 2004522434 T 20040729 JP 2002-555231 20010122
HU 2004001290 A2 20040928 HU 2004-1290 20010122
HU 2004001290 A3 20050628
NZ 527171 A 20050729 NZ 2001-527171 20010122
CZ 298689 B6 20071219 CZ 2003-1872 20010122
CN 100372930 C 20080305 CN 2001-822489 20010122
BG 107971 A 20040930 BG 2003-107971 20030704
PRIORITY APPLN. INFO.: US 2000-751687 A 20001229
WO 2000-IB2045 W 20001229
WO 2001-IB207 W 20010122

AB The invention relates to a mutant barley lipoxygenase 1 gene (lox-1) that encodes an enzyme with severely reduced 9-hydroperoxy-octadecanoic acid forming activity. Screening and selection of lipoxygenase isoenzyme mutants from mutagenized barley is described. Line G with low-lipoxygenase phenotype was identified. The Line G has a mutant allele of the lox-1 gene causing a low-lipoxygenase phenotype. Comparison of the nucleotide sequence of lox-1 of the Line G with that of wild-type showed that the Line G lox-1 allele has two mutations. One is a silent C→T substitution at position 221 in exon 1, and the second is a G→A substitution at position 2347 in exon 3. The mutation at position 2347 in Line G lox-1 allele causes amino acid substitution of Gly to Asp at residue 368 in the encoded protein. Barley plants having reduced lipoxygenase-1 enzyme activity are provided, for example, barley plants expressing mutant LOX-1 protein. The barley cultivars of the invention are useful in the production of plant products such as malt and brewed beverages, particularly beer, having increased flavor stability and reduced trans-2-nonenal potential.

IC ICM C12N009-02
ICS C12N015-82; A01H005-10
CC 7-5 (Enzymes)
Section cross-reference(s): 3, 11, 17
IT Alleles
Beer
Beverages
Breeding, plant
Brewing
Cereal (grain)
DNA sequences
Hordeum vulgare
Malt
Mutagenesis
Mutation
Phenotypes
cDNA sequences
(construction of mutant barley lipoxygenase 1 gene, characterization of mutant enzyme with reduced activity, and use of low-lipoxygenase 1 barley in brewing)
IT Hydroperoxides
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(polyunsatd. fatty alkyl, carboxy, formation of; construction of mutant barley lipoxygenase 1 gene, characterization of mutant enzyme with reduced activity, and use of low-lipoxygenase 1 barley in brewing)
IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(polyunsatd., esters, oxidation of; construction of mutant barley lipoxygenase 1 gene, characterization of mutant enzyme with reduced activity, and use of low-lipoxygenase 1 barley in brewing)
IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(polyunsatd., hydroperoxy, formation of; construction of mutant barley lipoxygenase 1 gene, characterization of mutant enzyme with reduced activity, and use of low-lipoxygenase 1 barley in brewing)

IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(polyunsatd., oxidation of; construction of mutant barley lipoxygenase 1 gene, characterization of mutant enzyme with reduced activity, and use of low-lipoxygenase 1 barley in brewing)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2002:874606 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 138:270623
TITLE: Influence of the acrospire of malted barley on flavor stability and other quality parameters of beer
AUTHOR(S): Zuercher, Achim; Krottenthaler, Martin; Rauber, Martin; Schneeberger, Mark; Back, Werner
CORPORATE SOURCE: Lehrstuhl fuer Technologie der Brauerei 1, Technische Universitaet Muenchen, Freising-Weihenstephan, D-85350, Germany
SOURCE: Monograph - European Brewery Convention (2002), 31(Flavour and Flavour Stability), 35-43
CODEN: MEBCD6; ISSN: 0255-7045
PUBLISHER: Fachverlag Hans Carl
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
AB The acrospire of malt is enriched with lipids and lipid degrading enzymes (5). Further constituents of the acrospire and the distribution of lipoxygenase (LOX) in malted barley are presented. In brewing trials the influence of the acrospire on wort composition and beer quality (e.g. foam stability, flavor and flavor stability) was evaluated. Furthermore the influence milling temperature and grist storage on lipid oxidation is presented. The effect of malt conditioning (steaming and wet conditioning) on LOX activity of malt is shown. Moreover the impact of grist fineness and acrospire fineness on extraction and inactivation of LOX is discussed. Results indicate how lipid oxidation during wort and, beer production can be minimized in order to enhance flavor stability of beer.
CC 17-13 (Food and Feed Chemistry)
IT Food foaming
Hordeum vulgare
Malt
Taste
Worts
(acrospire influence on malted barley flavor stability and other quality parameters of beer)
IT Hydroperoxides
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(acrospire influence on malted barley flavor stability and other quality parameters of beer)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:536283 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 136:19329
TITLE: Evaluation of the "organoleptic" quality of malt. Evolution during malting and varietal influence
AUTHOR(S): Boivin, P.; Malanda, M.; Clamagirand, V.
CORPORATE SOURCE: Institut Francais des Boissons de la Brasserie Malterie (IFBM), Vandoeuvre, Fr.
SOURCE: Proceedings of the Congress - European Brewery Convention (1999), 27th, 397-404
CODEN: EBCPA6; ISSN: 0367-018X
PUBLISHER: IRL Press at Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: French
AB A test was developed for the evaluation of the potential to form hydroperoxides 9 and 13, precursors of the carbonyl compds. of beer which cause lipoxygenase activities 1 and 2 and the antioxidant activity of malt. The method was used to determine, on a 1-to-100 scale, the hydroperoxide 9 potential of malts, a precursor of trans-2-nonenal in beer. The difference between the malts was not only caused by the lipoxygenase activity, but also by the presence of antioxidants which were produced mainly during kilning. This production of antioxidants depends on the barley variety.
CC 17-13 (Food and Feed Chemistry)
IT Hydroperoxides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(13; evaluation of the organoleptic quality of malt in relation to evolution during malting and varietal influence)
IT Hydroperoxides
RL: BSU (Biological study, unclassified); BIOL (Biological study)

(9; evaluation of the organoleptic quality of malt in relation to evolution during malting and varietal influence)
IT Antioxidants
Flavor
Genetics
Hordeum vulgare
Malt
(evaluation of the organoleptic quality of malt in relation to evolution during malting and varietal influence)
IT Hydroperoxides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(evaluation of the organoleptic quality of malt in relation to evolution during malting and varietal influence)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L42 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 1998:517187 HCAPLUS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: 129:244156
ORIGINAL REFERENCE NO.: 129:49711a,49714a
TITLE: Lipoxygenase effects in aging of beer
AUTHOR(S): De Buck, Annemie; De Rouck, Gert; Aerts, Guido; Bonte, Sabine
CORPORATE SOURCE: Dept. KIHO, KaHo Sint-Lieven, Belg.
SOURCE: Cerevisia (1998), 23(2), 25-37
CODEN: CEREFI; ISSN: 0770-1713
PUBLISHER: Cerevisia
DOCUMENT TYPE: Journal
LANGUAGE: Dutch
AB Aging of beer involves changes in flavor impression. Chemical reactions during brewing lead to formation of an oxidized flavor. A papery, pasty, or cardboard off-flavor due to trans-2-nonenal arises in many beers during storage; this is related to lipid oxidation during wort production Controlling oxidation during wort production is important for flavor stability. Next to autoxidn., the enzymic oxidation caused by malt lipoxygenase (LOX) is very important. Although 2 LOX isoenzymes contribute to the nonenal potential in wort, it is mainly LOX-1 that produces linoleic acid 9-hydroperoxide, a precursor of trans-2-nonenal; LOX-1 is thought to be the key enzyme in beer staling. An improved extraction method for lipoxygenase and a separation method for LOX-1 and LOX-2 are presented. LOX-2 is only detected in germinating barley, while LOX-1 is present in the barley grain. The activity of both isoenzymes increases during germination and decreases during kilning. Only a small portion of the remaining LOX is extracted into the mash. LOX remaining in the nonextd. material can produce more hydrophilic hydroperoxide precursors that can dissolve in the wort. Methods to control and reduce beer staling generally involve control of LOX at different stages of malting and brewing, including development of LOX during malting, O2 uptake during milling, O2 levels in the mash, temperature and pH of mashing-in, extraction of lipids and LOX during mashing, LOX remaining in the nonextd. material, and wort separation Natural antioxidants of barley should be protected and the production of new antioxidants in situ could be favored. Also, the fermentation conditions and selection of the yeast variety can influence the reducing capacity of the final beer.
CC 16-3 (Fermentation and Bioindustrial Chemistry)
IT Antioxidants
Autoxidation
Barley
Beer
Fermentation
Germination
Malt
Malting
Mashes
Worts
Yeast
(lipoxygenase effects in aging of beer)
IT Hydroperoxides
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)
(lipoxygenase effects in aging of beer)

L42 ANSWER 12 OF 16 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN DUPLICATE 1
ACCESSION NUMBER: 2006:348173 BIOSIS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: PREV200600340546
TITLE: Purification, crystallization and preliminary X-ray diffraction analysis of pathogen-inducible oxygenase (PIOX) from Oryza sativa.
AUTHOR(S): Lloyd, Tracy; Krol, Adam; Campanaro, Danielle; Malkowski, Michael [Reprint Author]
CORPORATE SOURCE: Hauptman Woodward Med Res Inst, Buffalo, NY 14203 USA

malkowski@hwi.buffalo.edu
SOURCE: Acta Crystallographica Section F Structural Biology and Crystallization Communications, (APR 2006) Vol. 62, No. Part 4, pp. 365-367. ISSN: 1744-3091. E-ISSN: 1744-3091.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Jul 2006
Last Updated on STN: 12 Jul 2006
AB Pathogen-inducible oxygenase ( PIOX) is a heme-containing membrane-associated protein found in monocotyledon and dicotyledon plants that utilizes molecular oxygen to convert polyunsaturated fatty acids into their corresponding 2R-hydroperoxides. PIOX is a member of a larger family of fatty-acid alpha-dioxygenases that includes the mammalian cyclooxygenase enzymes cyclooxygenase 1 and 2 (COX-1 and COX-2). Single crystals of PIOX from rice ( Oryza sativa) have been grown from MPD using recombinant protein expressed in Escherichia coli and subsequently extracted utilizing decyl maltoside as the solubilizing detergent. Crystals diffract to 3.0 angstrom resolution using a rotating-anode generator and R-AXIS IV detector, and belong to space group P1. Based on the Matthews coefficient and self-rotation function analyses, there are presumed to be four molecules in the asymmetric unit related by noncrystallographic 222 symmetry.
CC Enzymes - General and comparative studies: coenzymes 10802
Plant physiology - Enzymes 51518
Agronomy - Miscellaneous and mixed crops 52502
Agronomy - Grain crops 52504
IT Major Concepts
Methods and Techniques; Enzymology (Biochemistry and Molecular Biophysics); Agronomy (Agriculture)
IT Chemicals & Biochemicals
molecular oxygen; polyunsaturated fatty acid; alpha-dioxygenase; cyclooxygenase 2 [COX2]; decyl maltoside; cyclooxygenase 1 [COX1]; pathogen-induced oxygenase; 2R-hydroperoxide
IT Methods & Equipment
X-ray diffraction: laboratory techniques, crystallographic techniques
ORGN Classifier
Dicotyledones 25500
Super Taxa
Angiospermae; Spermatophyta; Plantae
Organism Name
dicotyledon (common)
Taxa Notes
Angiosperms, Dicots, Plants, Spermatophytes, Vascular Plants
ORGN Classifier
Gramineae 25305
Super Taxa
Monocotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
Oryza sativa (species): grain crop
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants
ORGN Classifier
Monocotyledones 25202
Super Taxa
Angiospermae; Spermatophyta; Plantae
Organism Name
monocotyledon (common)
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants
RN 7782-44-7 (molecular oxygen)
329900-75-6 (cyclooxygenase 2)
329900-75-6 (COX2)
82494-09-5 (decyl maltoside)
329967-85-3 (cyclooxygenase 1)
329967-85-3 (COX1)

L42 ANSWER 13 OF 16 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN DUPLICATE 2
ACCESSION NUMBER: 2006:37119 BIOSIS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: PREV200600030884
TITLE: Characterization of 9-fatty acid hydroperoxide lyase-like activity in germinating barley seeds that transforms 9(S)-hydroperoxy-10(E),12(Z)-octadecadienoic acid into 2(E)-nonenal.
AUTHOR(S): Kuroda, Hisao [Reprint Author]; Kojima, Hidetoshi; Kaneda, Hirotaka; Takashio, Masachika

CORPORATE SOURCE: Sapporo Breweries Ltd, Frontier Labs Value Creat, 10 Okatohme, Shizuoka 4250013, Japan
Hisao.Kuroda@sapporobeer.co.jp
SOURCE: Bioscience Biotechnology and Biochemistry, (SEP 2005) Vol. 69, No. 9, pp. 1661-1668.
ISSN: 0916-8451.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Dec 2005
Last Updated on STN: 28 Dec 2005
AB Previously, we reported that 2(E)-nonenal, having a low flavor threshold (0.1 ppb) and known as the major contributor to a cardboard flavor (stale flavor) in stored beer, is produced by lipoxygenase-1 and a newly found factor named 9-fatty acid hydroperoxide lyase-like (9-HPL-like) activity in malt. To assess the involvement of 9-HPL-like activity in beer staling, we compared the values of the wort nonenal potential, an index for predicting the staleness of beer, with the lipoxygenase and 9-HPL-like activity of 20 commercial malts. There was a significant correlation between the malt 9-HPL-like activity and the values of wort nonenal potential ($r = 0.53$, $P < 0.05$), while the correlation between malt lipoxygenase activity and the wort nonenal potential was statistically insignificant. Analysis of the partially purified 9-HPL-like activity from embryos of germinating barley seeds indicated that 9-HPL-like activity consisted of fatty acid hydroperoxide lyase and 3Z:2E isomerase.
CC Enzymes - General and comparative studies: coenzymes 10802
Food technology - General and methods 13502
Food technology - Cereal chemistry 13510
Food technology - Malts, brews and other fermentation products 13512
Development and Embryology - General and descriptive 25502
Plant physiology - Growth, differentiation 51510
Plant physiology - Enzymes 51518
Agronomy - Miscellaneous and mixed crops 52502
Agronomy - Grain crops 52504
IT Major Concepts
Enzymology (Biochemistry and Molecular Biophysics); Foods; Agronomy (Agriculture)
IT Chemicals & Biochemicals
lipoxygenase-1; 9-fatty acid hydroperoxide lyase; 9(S)-hydroperoxy-10(E),12(Z)-octadecadienoic acid; 2(E)-nonenal
IT Miscellaneous Descriptors
germination; beer: beer; malt: grain product; stale flavor
ORGN Classifier
Gramineae 25305
Super Taxa
Monocotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
Hordeum vulgare (species) [barley (common)]: embryo, seed, grain crop, cultivar-Haruna nijo
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants

L42 ANSWER 14 OF 16 BIOSIS COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 1996:186600 BIOSIS Full-text<<LOGINID::20090219>>
DOCUMENT NUMBER: PREV199698742729
TITLE: Use of chemiluminescence HPLC for measurement of positional isomers of hydroperoxy fatty acids in malting and the protein rest stage of mashing.
AUTHOR(S): Walker, Martin D.; Hughes, Paul S.; Simpson, William J. [Reprint author]
CORPORATE SOURCE: BRF International, Nutfield, Redhill, Surrey RH1 4HY, UK
SOURCE: Journal of the Science of Food and Agriculture, (1996) Vol. 70, No. 3, pp. 341-346.
CODEN: JSFAAE. ISSN: 0022-5142.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 29 Apr 1996
Last Updated on STN: 29 Apr 1996
AB Fatty acid hydroperoxides (9- and 13- hydroperoxides of linoleic acid and linolenic acid) were extracted from barley, malt and wort, and quantified by chemiluminescence HPLC. Although not detected in dried barley ( lt 0.5 mu-mol kg-1 (dry wt)), the concentrations of hydroperoxides increased during germination (up to 156 mu-mol kg-1 (dry wt) in the case of 9-hydroperoxylinoleic acid). Lipoxygenase (LOX) activity increased more than two-fold during germination. LOX activity and hydroperoxide concentrations were reduced considerably on kilning of malt. During mashing on a laboratory scale, malts with higher total LOX activities produced higher concentrations of hydroperoxides. The concentrations of 9-hydroperoxides were double those of the 13-hydroperoxides during malting and up to 10-fold greater during mashing, indicating a greater activity of LOX-1 in both processes.
CC Comparative biochemistry 10010
Biochemistry methods - General 10050

Biochemistry methods - Proteins, peptides and amino acids 10054
Biochemistry methods - Lipids 10056
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Biophysics - General 10502
Biophysics - Methods and techniques 10504
Biophysics - Molecular properties and macromolecules 10506
Enzymes - Methods 10804
Enzymes - Chemical and physical 10806
Enzymes - Physiological studies 10808
Metabolism - Lipids 13006
Food technology - Cereal chemistry 13510
Food technology - Malts, brews and other fermentation products 13512
Food technology - Evaluations of physical and chemical properties 13530
Food technology - Preparation, processing and storage 13532
Plant physiology - Growth, differentiation 51510
Plant physiology - Enzymes 51518
Plant physiology - Metabolism 51519
Plant physiology - Chemical constituents 51522
IT Major Concepts
Biochemistry and Molecular Biophysics; Development; Enzymology (Biochemistry and Molecular Biophysics); Foods; Metabolism; Methods and Techniques
IT Chemicals & Biochemicals
HYDROPEROXY
IT Miscellaneous Descriptors
ALCOHOLIC BEVERAGES; ANALYTICAL METHOD; BEER; BREWING; ENZYME ACTIVITIES; FOOD CHEMISTRY; FOOD PROCESSING; GERMINATION; HIGH PERFORMANCE LIQUID CHROMATOGRAPHY; HYDROPEROXIDES; MALT; METHODS; WORT
ORGN Classifier
Gramineae 25305
Super Taxa
Monocotyledones; Angiospermae; Spermatophyta; Plantae
Organism Name
barley
Taxa Notes
Angiosperms, Monocots, Plants, Spermatophytes, Vascular Plants
RN 3170-83-0 (HYDROPEROXY)

L42 ANSWER 15 OF 16 FSTA COPYRIGHT 2009 IFIS on STN DUPLICATE 5
ACCESSION NUMBER: 1995(06):H0011 FSTA Full-text<<LOGINID::20090219>>
TITLE: Behavior of lipid hydroperoxides during mashing.
AUTHOR: Kobayashi, N.; Kaneda, H.; Kano, Y.; Koshino, S.
CORPORATE SOURCE: Brewing Res. Lab., Sapporo Breweries Ltd., 10 Okatohme, Yaizu-Shi, Shizuoka 425, Japan
SOURCE: Journal of the American Society of Brewing Chemists, (1994) 52 (4) 141-145, 30 ref.
ISSN: 0361-0470
DOCUMENT TYPE: Journal
LANGUAGE: English
AB [Lipid hydroperoxides, the primary products of lipid oxidation, are formed during wort production and have an adverse effect on beer flavour and aroma.] Lipid hydroperoxides such as trilinolein hydroperoxides in barley, malt, and mash were analysed using a chemiluminescence HPLC method. During mashing in a laboratory mash bath, hydroperoxides increased for a short time just after mashing-in, but subsequently gradually decreased. The increasing peaks of lipid hydroperoxide production occurred before those of the free fatty acid hydroperoxides. Malts with higher lipoxygenase activity produced more lipid hydroperoxides during mashing. This study confirms the contribution of malt enzymes such as lipoxygenase and lipase to lipid oxidation and clarifies the lipid oxidation mechanism during mashing.

L42 ANSWER 16 OF 16 SCISEARCH COPYRIGHT (c) 2009 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:299148 SCISEARCH Full-text<<LOGINID::20090219>>
THE GENUINE ARTICLE: 536UQ
TITLE: Selective (R)-3-hydroxylation of FA by Stenotrophomonas maltophilia
AUTHOR: Schreier P (Reprint)
CORPORATE SOURCE: Univ Wurzburg, Lehrstuhl Lebensmittelchem, D-97074 Wurzburg, Germany (Reprint)
AUTHOR: Weil K; Gruber P; Heckel F; Harmsen D
CORPORATE SOURCE: Univ Wurzburg, Inst Hyg & Mikrobiol, D-97074 Wurzburg,

Germany
COUNTRY OF AUTHOR: Germany
SOURCE: LIPIDS, (MAR 2002) Vol. 37, No. 3, pp. 317-323.
ISSN: 0024-4201.
PUBLISHER: AMER OIL CHEMISTS SOC A O C S PRESS, 1608 BROADMOOR DRIVE,
CHAMPAIGN, IL 61821-0489 USA.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 37
ENTRY DATE: Entered STN: 19 Apr 2002
Last Updated on STN: 19 Apr 2002
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*
AB Soil samples were screened for microorganisms selectively transforming FA. One of the isolated strains was identified as the bacterium Stenotrophomonas maltophilia by its phenotypic features and genotypic characterization by sequencing the ribosomal RNA gene. Using linoleic acid as substrate resulted in the formation of two major compounds. After liquid chromatographic isolation and separation, their structures were elucidated by HPLC-tandem MS, GC-MS, and NMR techniques to be 3-hydroxy-Z6-dodecenoic acid and 3-hydroxy-Z5,Z8-tetradecadienoic acid. In additional experiments, other FA, such as alpha-linolenic, oleic, palmitoleic, myristoleic, and cis-vaccenic acids, were converted to 3-hydroxylated metabolites of shorter chain lengths as well. Determination of the enantiomeric composition revealed highly enriched (R)-hydroxylation (88-98% enantiomeric excess).

=> d his nofil

(FILE 'HOME' ENTERED AT 12:01:42 ON 19 FEB 2009)

FILE 'HCAPLUS' ENTERED AT 12:02:30 ON 19 FEB 2009
E MALT/CT
E E3+ALL
L1 6507 SEA ABB=ON PLU=ON MALT/CT
E BEVERAGES/CT
E E3+ALL
L2 24654 SEA ABB=ON PLU=ON BEVERAGES+UF/CT
L3 2865 SEA ABB=ON PLU=ON MALT? (S) (L2 OR BEVERAGE# OR SOFT DRINK# OR SODA POP#)
L4 1618 SEA ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE?
L5 136 SEA ABB=ON PLU=ON FATTY ACID# (S) HYDROPEROXIDE LYASE
L6 3 SEA ABB=ON PLU=ON FATTY ACID# (S) (HPLS OR HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXIDE ISOMEASE)
L7 73 SEA ABB=ON PLU=ON HOMOLYTIC HPLS OR HOMOLYTIC HYDROPEROXIDE LYASE OR HYDROPEROXIDE ISOMERASE
L8 2 SEA ABB=ON PLU=ON L3 AND L4
L9 2 SEA ABB=ON PLU=ON L3 AND ((L5 OR L6 OR L7))
L10 2 SEA ABB=ON PLU=ON L8 OR L9
D SCAN TI HIT
E HYDROPEROXIDES/CT
E E3+ALL
L11 6930 SEA ABB=ON PLU=ON HYDROPEROXIDES+UF/CT
L12 9 SEA ABB=ON PLU=ON L11 AND L1
L13 8 SEA ABB=ON PLU=ON L12 NOT L10
L14 3469 SEA ABB=ON PLU=ON (HYDROPEROXID? OR L11) (S) (FATTY ACID# OR LYASE? OR HPLS OR HOMOLYTIC HPLS OR ISOMERASE)
L15 19 SEA ABB=ON PLU=ON L14 AND (L1 OR MALT#)
E ASSAYING/CT
E E3+ALL
L16 55802 SEA ABB=ON PLU=ON ANALYSIS/CT
E SCREENING/CT
E E3+ALL
L17 6137 SEA ABB=ON PLU=ON SCREENING/CT
L18 888 SEA ABB=ON PLU=ON (L1 OR MALT#) (W) (SCREEN? OR ASSAY? OR L16 OR L17)
L19 3 SEA ABB=ON PLU=ON L18 AND (L11 OR L14)
L20 11 SEA ABB=ON PLU=ON L10 OR L13 OR L19
D SCAN TI HIT
E KURODA HISAO/AU
L21 55 SEA ABB=ON PLU=ON "KURODA HISAO"/AU
E FURUSHO SHIGEKI/AU
L22 6 SEA ABB=ON PLU=ON "FURUSHO SHIGEKI"/AU
E KOJIMA HIDETOSHI/AU
L23 39 SEA ABB=ON PLU=ON "KOJIMA HIDETOSHI"/AU
L24 5 SEA ABB=ON PLU=ON L21 AND (L22 OR L23)
L25 1 SEA ABB=ON PLU=ON L22 AND L23
L26 5 SEA ABB=ON PLU=ON L24 OR L25
L27 4 SEA ABB=ON PLU=ON L26 NOT L20

FILE 'AGRICOLA, BIOSIS, BIOTECHNO, FSTA, SCISEARCH' ENTERED AT 12:19:25 ON 19 FEB 2009
L28 3370 SEA ABB=ON PLU=ON L7 OR L14
L29 6 SEA ABB=ON PLU=ON MALT# (W) (SCREEN? OR ASSAY?)
L30 32 SEA ABB=ON PLU=ON MALT? (W) (SCREEN? OR ASSAY?)
L31 0 SEA ABB=ON PLU=ON L28 AND L30
L32 30 SEA ABB=ON PLU=ON L28 AND MALT?
L33 9170446 SEA ABB=ON PLU=ON SCREEN? OR ASSAY? OR ANALY?
L34 12 SEA ABB=ON PLU=ON L32 AND L33
L35 2141 SEA ABB=ON PLU=ON KURODA H?/AU
L36 54 SEA ABB=ON PLU=ON FURUSHO S?/AU
L37 3645 SEA ABB=ON PLU=ON KOJIMA H?/AU
L38 8 SEA ABB=ON PLU=ON L35 AND ((L36 OR L37))
L39 1 SEA ABB=ON PLU=ON L36 AND L37
L40 8 SEA ABB=ON PLU=ON L38 OR L39

FILE 'HCAPLUS' ENTERED AT 12:24:47 ON 19 FEB 2009
D QUE L27
D QUE L40

FILE 'HCAPLUS, BIOSIS, FSTA, SCISEARCH' ENTERED AT 12:25:49 ON 19 FEB 2009
L41 6 DUP REM L27 L40 (6 DUPLICATES REMOVED)
ANSWERS '1-4' FROM FILE HCAPLUS
ANSWER '5' FROM FILE FSTA
ANSWER '6' FROM FILE SCISEARCH
D L41 1-6 IBIB AB
D QUE L20
D QUE L34
L42 16 DUP REM L20 L34 (7 DUPLICATES REMOVED)
ANSWERS '1-11' FROM FILE HCAPLUS
ANSWERS '12-14' FROM FILE BIOSIS
ANSWER '15' FROM FILE FSTA
ANSWER '16' FROM FILE SCISEARCH
D L42 1-11 IBIB ABS HITIND
D L42 12-16 IBIB AB HITIND